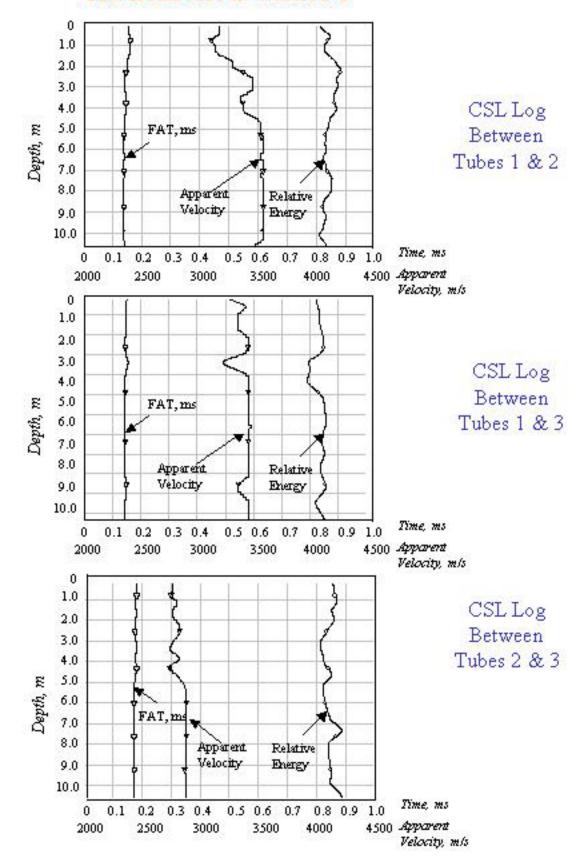
#### **ATTACHMENT 10**

Cross-hole sonic plots Abutment 1 Shafts 1, 2, 3 and 4 Abutment 2 Shafts 1, 2, 3 and 4

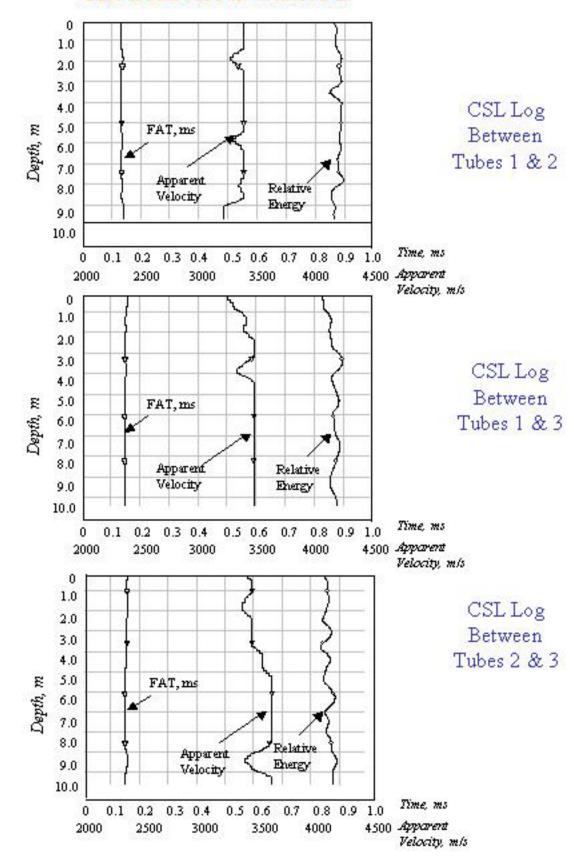
(Malcolm Drilling Company, Inc.)

PINEY CREEK BRIDGE ARROYO SECO BRIDGES CA PFH 129-1(1) Abutment 1 Shafts 1, 2, 3 and 4

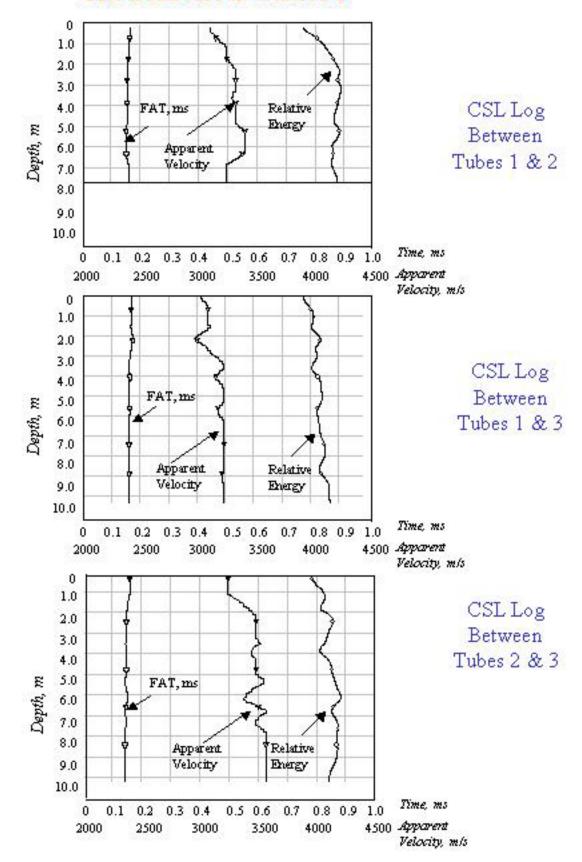
#### Abutment 1 Shaft 1



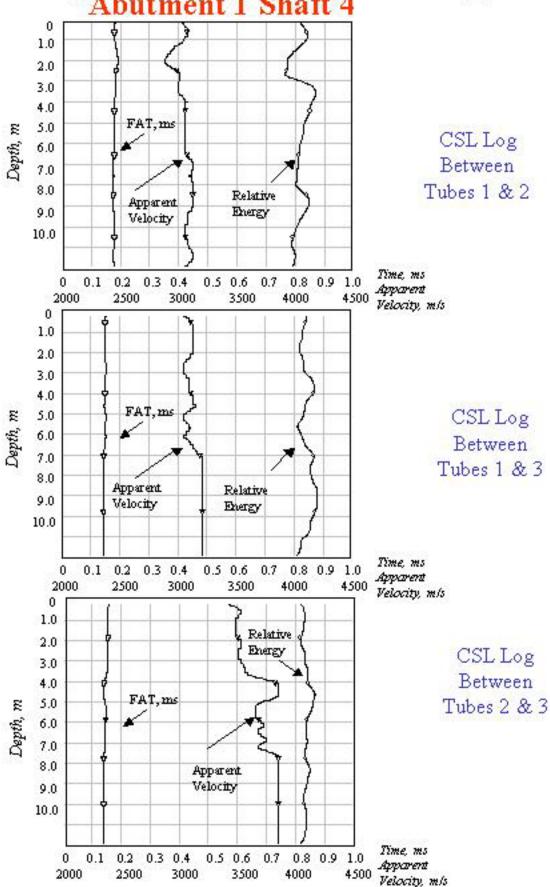
#### Abutment 1 Shaft 2



#### Abutment 1 Shaft 3

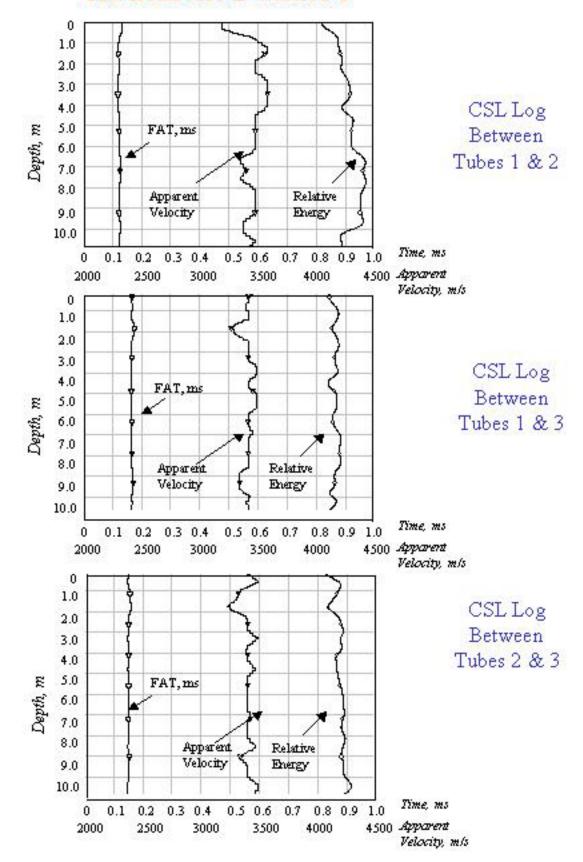


Piney Creek Bridge
Abutment 1 Shaft 4

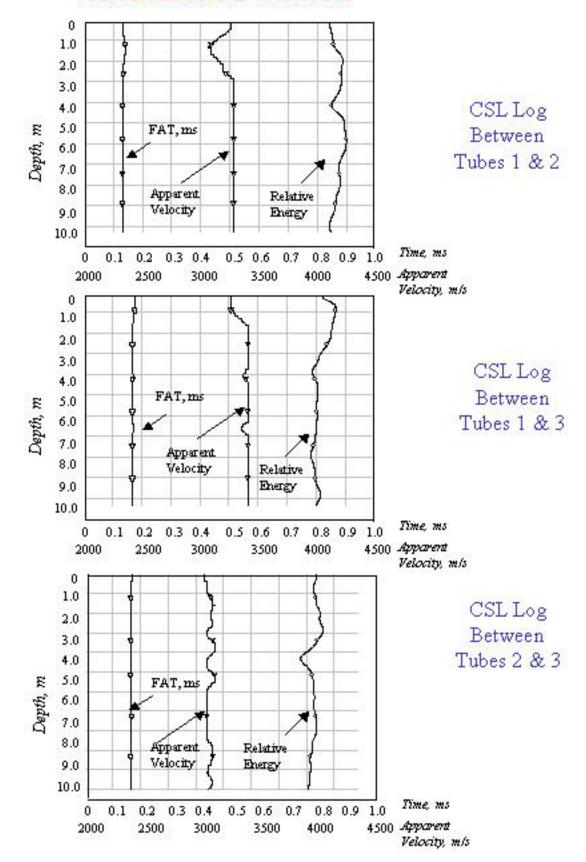


Abutment 2 Shafts 1, 2, 3 and 4

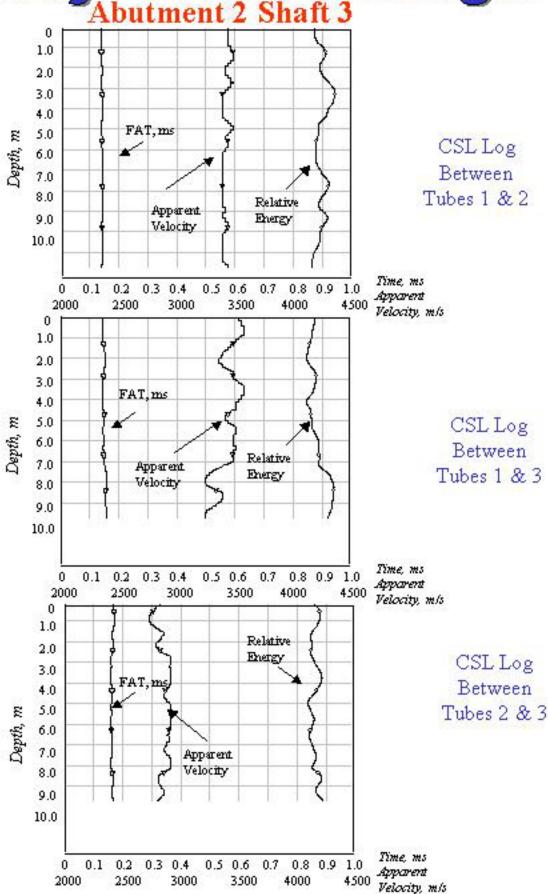
#### Abutment 2 Shaft 1



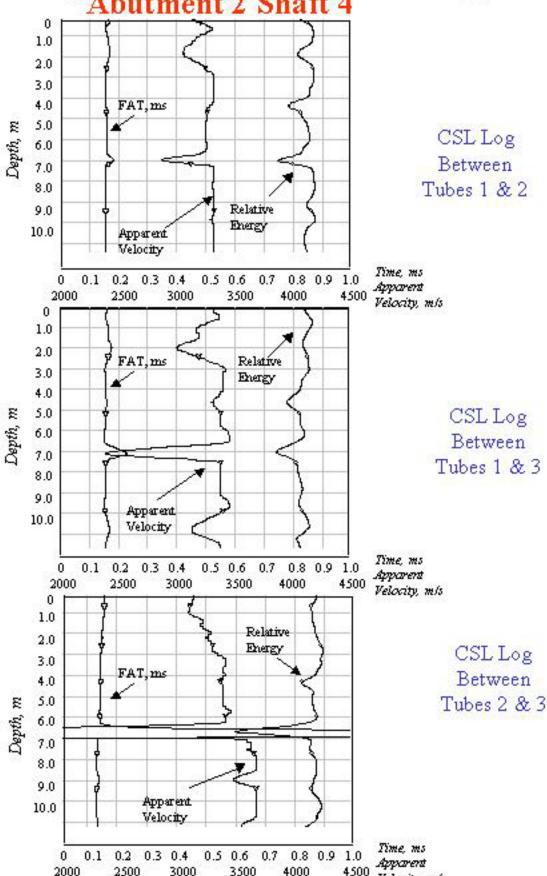
#### Abutment 2 Shaft 2



Piney Creek Bridge
Abutment 2 Shaft 3



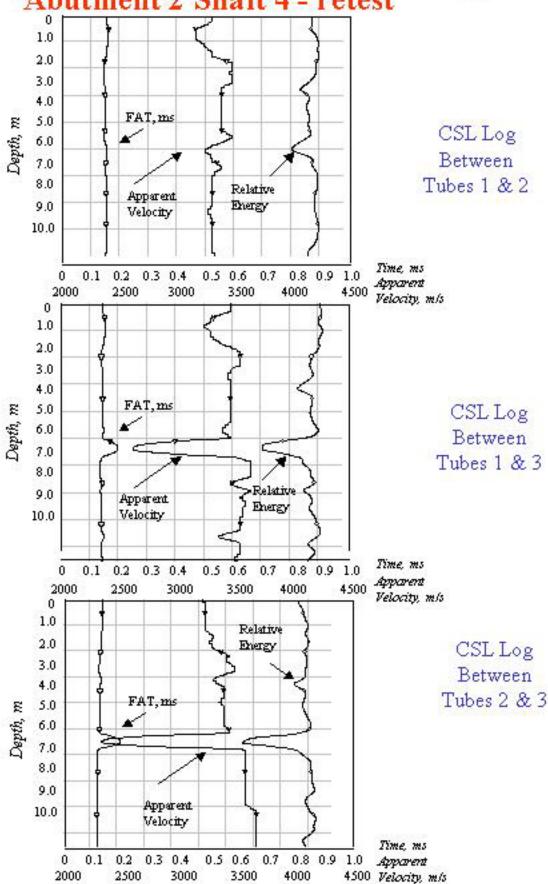
Piney Creek Bridge
Abutment 2 Shaft 4



Velocity, m/s

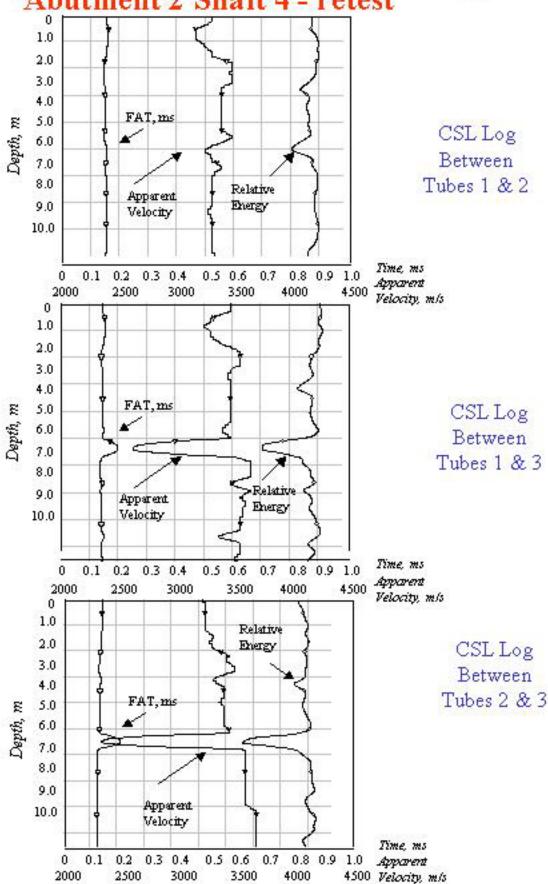
# Piney Creek Bridge Abutment 2 Shaft 4 - retest



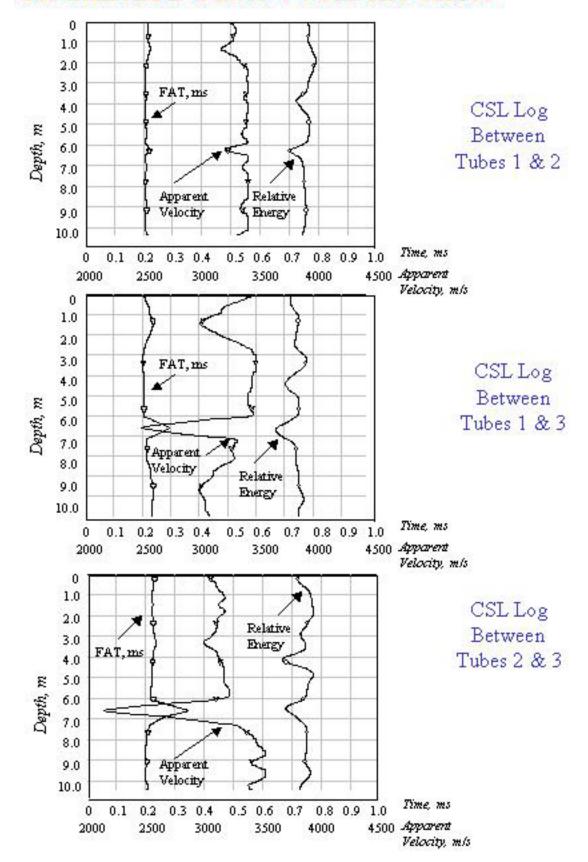


# Piney Creek Bridge Abutment 2 Shaft 4 - retest

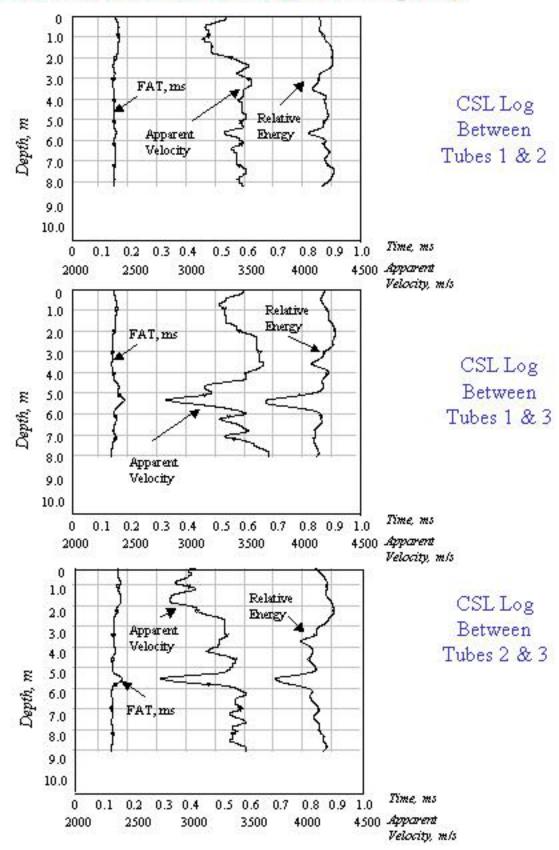




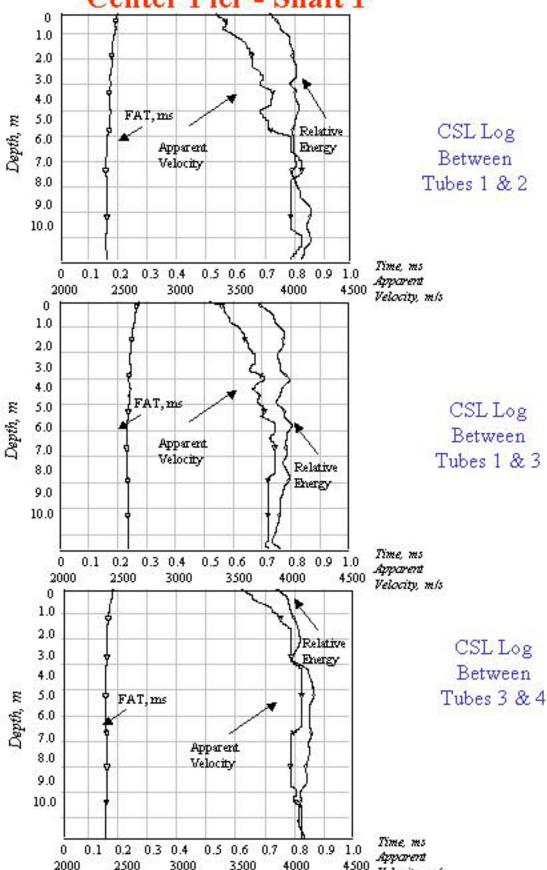
#### Abutment 2 Shaft 4 with the offset



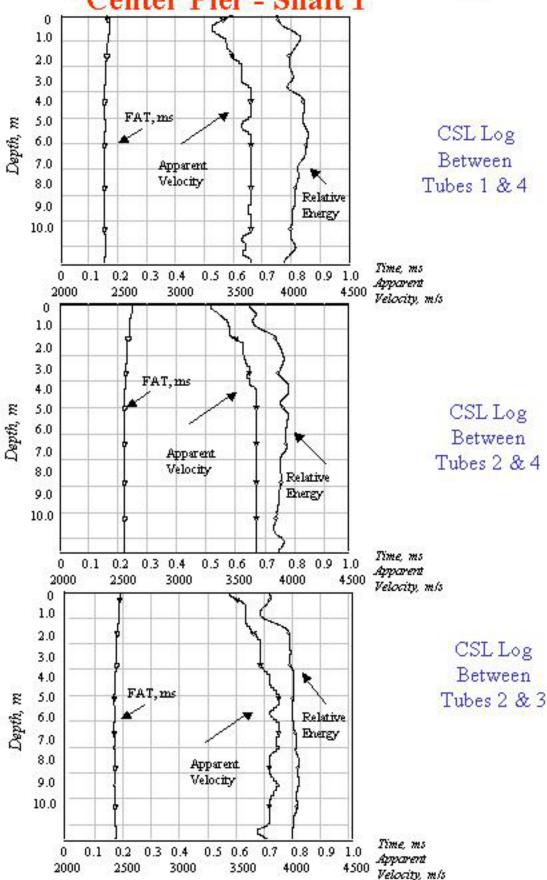
### Abutment 2 Shaft 4 (after repair)

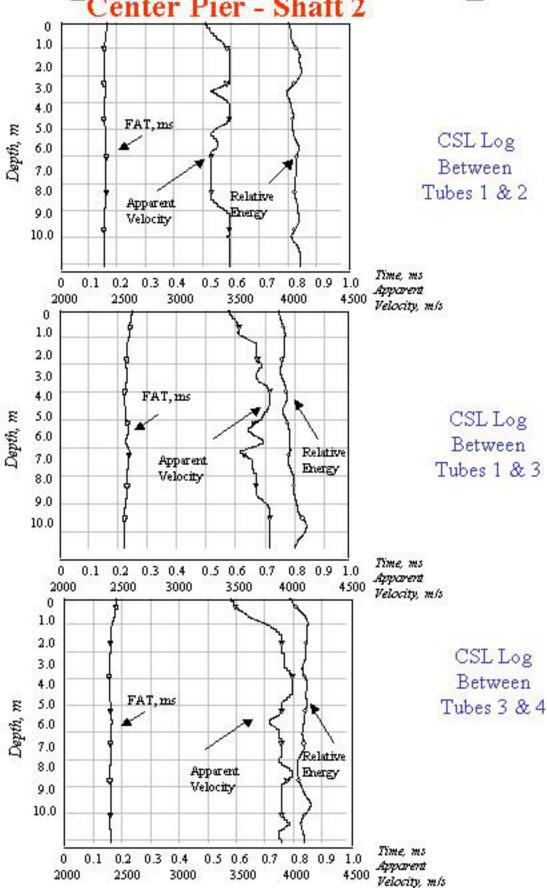


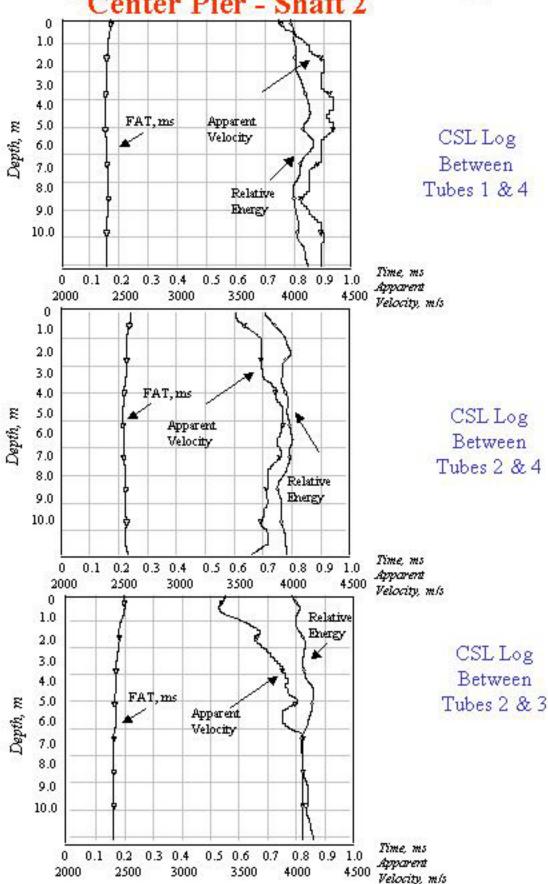
Center Pier Shafts 1, 2, 3 and 4



Velocity, m/s







Piney Creek Bridge Center Pier - Shaft 3 0 1.0 2.0 3.0 4.0 Relative FAT, ms Energy 5.0 CSL Log 6.0 Apparent Velocity Between 7.0 Tubes 1 & 2 8.0 9.0 10.0 Time, ms 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.1 0.9 1.0 Apparent 2000 2500 4000 3000 3500 4500 Velocity, m/s 0 1.0 2.0 Relative 3.0 FAT, ms Energy 4.0 5.0 CSL Log 6.0 Between 7.0 Tubes 1 & 3 Apparent 8.0 Velocity 9.0 10.0 Time, ms 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 Apparent 2000 2500 3000 3500 4000 4500 Velocity, m/s 0 1.0 Relative Energy 2.0 CSL Log 3.0 Between 4.0 FAT, ms Tubes 3 & 4 5.0 6.0 7.0 Apparent 8.0 Velocity 9.0 10.0 Time, ms

0.2

2500

2000

0.3 0.4

3000

0.5 0.6

3500

0.8 0.9 1.0

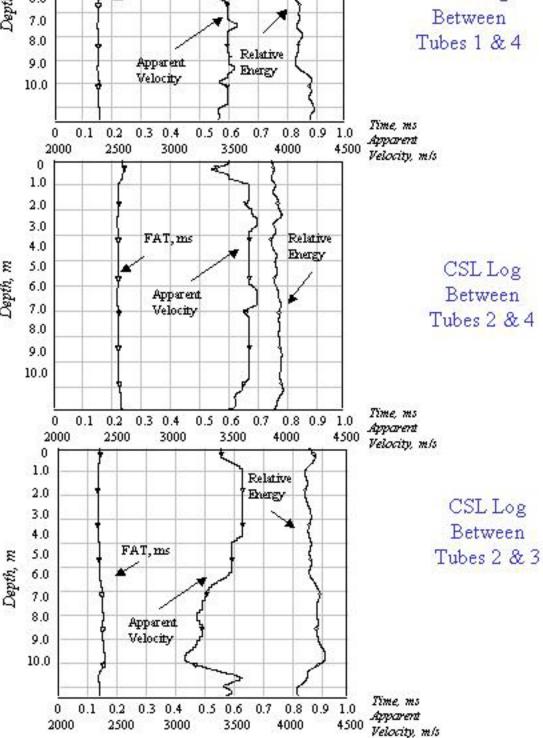
4000

Apparent

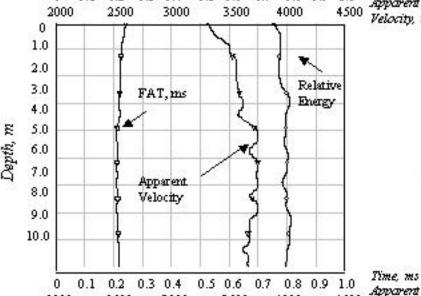
Velocity, m/s

4500

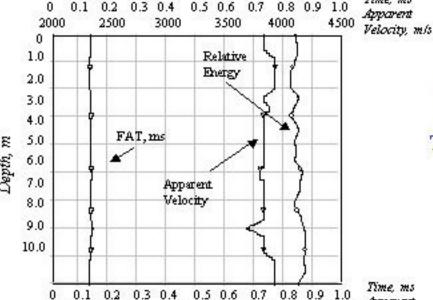
Piney Creek Bridge
Center Pier - Shaft 3 0 1.0 2.0 3.0 4.0 FAT, ms 5.0 CSL Log 6.0 Between 7.0 Tubes 1 & 4 8.0 Relative Apparent 9.0 Energy Velocity 10.0 Time, ms 0.2 0.5 0.6 0.7 0.1 0.3 0.4 0.8 0.9 1.0 Apparent 2000 2500 3000 3500 4000 4500 Velocity, m/s 0 1.0 2.0 3.0 FAT, ms Relative 4.0 Energy 5.0 CSL Log 6.0 Between Apparent 7.0 Velocity Tubes 2 & 4 8.0



Piney Creek Bridge Center Pier - Shaft 4 0 1.0 2.0 3.0 Relative 4.0 Energy FAT, ms 5.0 CSL Log 6.0 Apparent Between 7.0 Velocity Tubes 1 & 2 8.0 9.0 10.0 Time, ms 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 0.1 1.0 Apparent 2000 2500 3000 3500 4000 4500 Velocity, m/s 0 1.0 2.0



CSL Log Between Tubes 1 & 3



3000

3500

4000

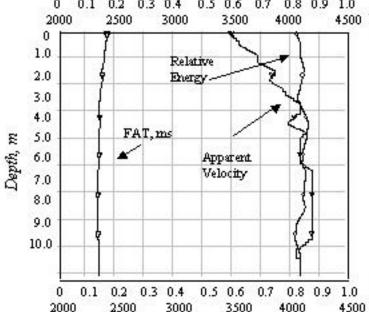
2000

2500

CSL Log Between Tubes 3 & 4

1.0 Time, ms
Apparent
4500 Velocity, m/s

Piney Creek Bridge
Center Pier - Shaft 4 0 1.0 2.0 3.0 4.0 FAT, ms 5.0 CSL Log 6.0 Between 7.0 Apparent Velocity Tubes 1 & 4 Relative 8.0 Energy 9.0 10.0 Time, ms 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 0.1 1.0 Apparent 2000 2500 3000 3500 4000 4500 Velocity, m/s 0 1.0 Relative 2.0 Energy 3.0 FAT, ms 4.0 CSL Log 5.0 6.0 Between Apparent 7.0 Tubes 2 & 4 Velocity 8.0 9.0 10.0 Time, ms 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 Apparent 2000 2500 3000 3500 4000 4500 Velocity, m/s 0 1.0 Relative



CSL Log Between Tubes 2 & 3

Time, ms Apparent Velocity, m/s